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I -- Historical Review

3. Since the year 1935, plant protection developed in the USSR in the same way and on the same principles as it was developed at that time in Western Europe and in the US. The leading scientist, A.A. Jaczewski, was called the Father of Russian Plant Protection; however, he never accepted Communism or Bolshevism, and was

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later imprisoned. He died damning Bolsheviks, and his last words were: "Not a single Bolshevik dares to appear at my funeral," and it happened that none did.

4. After Jaczewski's death, a new era began in the development of plant protection in the USSR. The bolshevistic agrarian reform and the introduction of the ~~Kolkhoz~~ system brought about a complete reorganization of plant protection. The new Soviet organization is different principally from that of Western Europe and the US in that it has not yet found its right way of development and is characterized by repeated reorganizations. To understand the existing organization of plant protection and quarantine in the USSR, it is necessary to know the basically different ~~Kolkhoz~~ system of agriculture and how it differs from that of the US.

II -- Organization of Plant Protection in the USSR

5. After several reorganizations in connection with basic changes in the development of ~~Kolkhoz~~ system in agriculture, and liquidation of private landowners, the existing organization of plant protection in the USSR was stabilized during the years 1935-1945. It contains the following basic differences, compared with our organization in the US:
- a. The entire organization of scientific research, control, application, quarantine, education, industry of sprayers and insecticides is, without exception, government controlled.
 - b. The entire organization is completely adjusted to serve the ~~Kolkhoz~~ system in agriculture, without consideration for any private or individual farmer.
 - c. The education, scientific research, control, and quarantine are centralized and coordinated by, and subordinate to, the Commissary (now it is called the ministry) of agriculture.
 - d. The private initiative of farmers or landowners to control disease and pests is eliminated, and only the government is interested in plant protection from the standpoint of state economy. Under these conditions, the control of diseases is made possible according to prescription only, and the government has to force the people to fill the prescription. ~~/sic/~~ This demands a large and complicated governmental organization.
6. The entire system of plant protection in the USSR contains the following parts:
- a. Scientific research is made in numerous special experimental stations, which are subordinate to a central institute in every oblast (territory), and to the Central Institute in Moscow. Application of control was organized in the same way.
 - b. Education and training of specialists were carried out by several agricultural colleges and by a special higher college for plant protection.
 - c. For plant quarantine a special organization was established, with several hundred technical inspectors: (1) outside quarantine for the whole USSR, and (2) inside quarantine in every oblast.

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- d. The manufacture of fungicides, insecticides, and equipment was subordinate to the commissary of light industry.
- e. A special organization for statistics was established to determine the percentage damaged from harvest caused by diseases and plant pests; otherwise, the Kolkhozes would declare the entire harvest to be eaten by some pest, to reduce the part Kolkhoz has to deliver to the government. These statistics, however, are held in highest secret and are not accessible even to the research institutions.
- f. The fulfillment of prescriptions and carrying out of control work are put on the Kolkhoz. Equipment is delivered by machine-tractor-stations.

III -- Research Activity

- 7. Research work in the field of plant protection is carried out very intensively in the USSR by agricultural colleges and special research and experimental stations. In greater oblasts there are central experimental stations for coordination of the research work of smaller oblasts.
- 8. Every experimental station has a number of qualified specialists who have their doctor's degree, and numerous technical personnel. They all work intensely ten to twelve hours per day, for a low salary and very little food. All research work is coordinated and centralized, and every worker has his work planned for him.
- 9. Until 1940, there were a number of qualified scientists from the older generation, with international reputation, who did excellent scientific work. Most of these were liquidated during the purge of 1948. The younger generation of specialists and research workers has no contact with Western science; the entire research work is concentrated on a local level.

IV -- Plant Quarantine

- 10. The organization of plant quarantine is the best developed in the world. It contains two parts:
 - a. Outside quarantine -- for the entire USSR, with the center in Moscow and a subcenter in Leningrad, the main importation center of the USSR.
 - b. Inside quarantine -- located in every oblast and controlling the distribution of plant diseases and pests inside the USSR. Every oblast or "gubernia," can be closed or eliminated for trading plant products, and is always under strict observation. In this way, it is possible to restrict the distribution of plant disease and pests inside the USSR. There were about two hundred diseases and pests listed as objects of plant quarantine.

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V -- Educational Program and Training of Specialists

11. The program of plant protection is carefully carried out in every agricultural and horticultural college. The USSR was the first country that opened a special college (university) for plant protection in order to prepare scientific specialists for research work. This college had a special program and was named after Jaczewski, but later the name was changed. By means of this college, the scientific and technical personnel get a careful and special education to enable them to cope with local conditions. The younger generation, however, is not much informed about research efforts in Western Europe and the US.

VI -- Principal Scientists in Plant Protection

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12.

A. A. Jaczewski -- called the father of plant protection in the USSR. Several times, as a representative of the USSR, was sent to international congresses. He wrote several books and monographs, and his influence in the field of plant protection is still remarkable.

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N. A. Naumov -- after the death of Jaczewski, took over the leading part in the scientific influence of plant protection.

His textbook, Plant Diseases, was published in several editions.

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Vanin -- the most prominent scientist of forest pathology.

A. S. Bondarzew -- a prominent mycologist and plant pathologist, working in the botanical garden of Leningrad.

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K. E. Murashkinski -- an active plant pathologist and mycologist in Siberia (Omsk).

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L. A. Lebedeva -- studied the slime and rust fungi (Mycomycetes) of the oblast of Leningrad.

Rozdestvenski -- a prominent bacteriologist and virologist who worked in the central station of plant protection in Moscow. He first established the map of distribution of virus diseases and potato blight in Europe, which was mentioned in several publications of Western Europe.

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W. Tranzchel -- a prominent scientist on rust fungi, whose theories about the heteroeccie of rust fungi are well known and accepted everywhere. His last monograph was, Uredinales of the USSR.

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Mrs. Bryzgalowa, employed in Irkutsk, Siberia

A. Djurinski, studied the diseases of sweet potatoes.

Mrs. Chernetskaja, was in Caucasus; studied corn diseases

Mrs. Fedotowa, studied Plasmodiophora disease

Mrs. Naumowa, studied Plasmodiophora

Krystal, a zoologist

Lavrov, a well known entomologist working in Transcaspic territory

S.U. Stroganov, studied the rats of the USSR

Vladimir Ryzkov, a well known physiologist; studied physiological diseases of plants

Mrs. Vladimirskaia, studied diseases of grain crops

Vladimir Timofeev, a zoologist; studied mammals as plant pests

A. Archimovitsz, a plant breeder in the Ukraine; bred resistant plant varieties (tomatoes)

T.D. Lysenko, President of Lenin's Academy of Science of the USSR;

very popular for his new theory and teaching -- Lysenkoism. He

was closely connected with plant protection, introducing a new

method of jarovisation (vernalisation) of potato seed, which eli-

minates the degeneration of potato seed. [redacted] his

famous experiments with potato plants, and the new varieties [redacted]

serve as the main scientific basis for his new theory and agricul-

tural genetics.

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VII -- An Evaluation of Soviet Ability to Control Disease Epidemics and Pest Outbreaks

14. The strongest side of Soviet agriculture is its well developed organization of plant protection and plant quarantine, which organization is centralized and the work well coordinated. The specialists are well trained and disciplined, every person having the utmost responsibility. Without a court hearing, the specialist can be sentenced to death for any mistake or failure in his task. The organization can easily apply the most drastic measures of inside and outside quarantine, or restrict the cultivation of any crop in certain districts.
15. The weakest points of Soviet agriculture are the lack of personal initiative and absence of private interest to start and continue the control work. Even all the prescriptions are filled as superficially as possible, if they are filled at all. [sic] The lack of fungicides, insecticides, and equipment at the right place and the right time is a further hindrance. Control usually is started too late, if it is started at all.
16. Lack of insecticides is caused by the less developed chemical industry. In the USSR, only the heavy industries are well developed, and this is mainly for purposes of war. All other branches, especially that of the chemical industry, are far behind. The epidemics and outbreaks of pests are still common, and average harvests not too great. The food situation is always very critical. Crops are especially susceptible to new diseases or pests which are introduced from outside.

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VIII -- Crops most Susceptible to Disease and Pest Attack

17. The main foods for the USSR are -- (a) grain crops (rye, wheat, barley, oats, corn); (b) potato; (c) vegetable (cabbage). Meat and fish are very scarce. All other plants are less important. In some restricted districts as Caucasus and Crimea, horticulture and viticulture are more important than agriculture.
18. Grain crops are most susceptible to smuts and rusts. Seed treatment is prescribed but seldom applied. 50X1-HUM
Up to 1941, the chemical industry could not deliver a satisfactory seed treatment.
19. Potato (Irish) [the sweet potato is of no importance] is the most susceptible crop on which several millions of lives are dependent. Potato blight is widely distributed in the central and northern parts of the USSR, and causes tremendous damages. The average potato harvest, therefore, is very low compared to that of the US. Spraying is prescribed but practically not applicable because of the lack of chemicals and sprayers. The most rational way is to use blight-resistant varieties. Lysenko later introduced his new method, breeding new varieties.
20. In the central and southern parts of the USSR, the newly distributed virus diseases are the most damaging, also ecological degeneration, all of which reduces the harvest to a minimum. Here, Lysenko applied his method of jarovisation on a large scale.
21. There are now many new and very dangerous diseases and pests spreading in the USSR, which may cause serious setbacks in agriculture. In the northwestern part of the potato belt, there is the leaf roll and wart (*Synchytrium Endobioticum*), which have been brought in during World War II, and whose spreading can no longer be stopped. The potato beetle is approaching from the West. This pest had an average speed of distribution of about twenty miles per year before World War II; during and after World War II, this pest increased its speed of distribution to fifty miles per year, and appeared far behind the restricted zone. This increased speed of distribution confused men who are responsible for the control of this pest. In order to save their head, they finally found a practical solution to the new danger -- they reported that US airplanes were distributing potato beetles during the night, the report being printed in all the papers. As this was welcomed propaganda against the Americans, the liars saved their heads. The US never tried to repudiate this lie, and the Soviet people still believe the potato beetles are being distributed by the Americans. The same trick was used by Hitler during World War II, and several German people still believe it.
22. For rye, there is a new and dangerous smut -- *Tilletia secalis*.

IX -- Crop Losses from Diseases and Pest Attack

23. Crop losses are commonly very great, considerably reducing the average harvest. Great losses occur especially during the storage of harvested crops. Distribution of food is the most important instrument in the hands of the government in forcing the people to work and also in breaking all political resistance. The bolshevistic system needs to have all harvest and food reserves in its hands.
24. Not having enough suitable storage rooms, it is very difficult to protect the harvest against pests and thieves. Before World War II, silos of iron concrete had been built on a large scale for storage purposes, but during the war these silos were a good target for German bombers.

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X -- Disease and Pest Survey Reports

25. All scientific research records are available and are published in several special magazines, reports, and leaflets. Until 1936, the USSR, for propaganda purposes, tried to publish as much as possible in foreign journals. After this time, Soviet scientists were prohibited from publishing their records outside the country unless the Party found it necessary for propaganda purposes.
26. There is a special organization for statistics of epidemics and losses; however, these records are kept strictly secret and are not available for the scientists except in special cases for Party or propaganda purposes. A certain picture may get only someone who is allowed to travel through several oblasts and see the damage, but only a few specialists, having good reasons for traveling, can see outside their immediate working place. The common citizen can neither leave his working place nor do any traveling.

XI -- Disease and Pest Forecasting and Information Dissemination

27. In the USSR, there is no public broadcasting system as we in the US know the meaning of the term. All information is sent directly to directors of the kolkhoz or to the person directly concerned. The spreading of epidemics and outbreaks of pests are always kept secret in order not to alarm the public. The common citizen never knows from where the food comes which he eats, or whether he will have anything to eat the next day or not.

XII -- Conclusion

28. A highly developed organization of plant protection and plant quarantine is maintained because epidemics and pest outbreaks are an important factor in Soviet economy and because they reduce, very remarkably, the military capacity of the USSR. This weakness is dependent upon the whole kolkhoz-system of Soviet agriculture. In order to understand the organization of plant protection, it is necessary to be acquainted with the basis of this system. World War II introduced several new diseases and pests into the USSR, which is a serious problem for the Soviet system. In the New World, there are still about one hundred diseases and pests which are very much feared in the USSR.

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